Docket No.: S1459.70065US00
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Yusuke Suzuki et al.
Serial No.:	10/527,351
Confirmation No.:	4788
Filed:	March 9, 2005
For:	PHOTOVOLTAIC ELEMENT
Examiner:	E. Wong
Art Unit:	1795

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Dated: November 11, 2009

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REPLY BRIEF

This Reply Brief is being submitted in response to the Examiner's Answer mailed on September 11, 2009.

The **Status of the Claims** is described on page 2 of this paper.

The **Grounds of Rejection to be Reviewed** appear on page 3 of this paper.

Remarks appear on page 4 of this paper.

STATUS OF CLAIMS

The Office Action finally rejected claims 1-4, 14 and 17 (including independent claim 1) under 35 U.S.C. §103(a) as allegedly being unpatentable over Fujimori et al. (U.S. Patent 6,683,244 B2). The Office Action finally rejected dependent claims 6, 8-13 and 15-16 under 35 U.S.C. §103(a) as allegedly being unpatentable over Fujimori et al. in view of various references.

The Office Action finally rejected claims 1-4 and 6-17 under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. As indicated in the Advisory Action mailed July 6, 2009, the rejections under 35 U.S.C. §112, first paragraph were withdrawn in view of Applicants' amendment filed on June 18, 2009.

A. Total Number of Claims in Application

There are fifteen claims pending in this application: claims 1-4, 6 and 8-17.

B. Current Status of Claims

1. Claims canceled: 5 and 7
2. Claims withdrawn from consideration but not canceled: None
3. Claims pending: 1-4, 6 and 8-17
4. Claims allowed: None
5. Claims rejected: 1-4, 6 and 8-17

C. Claims On Appeal

Applicants appeal the rejections of claims 1-4, 6 and 8-17 under 35 U.S.C. §103.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether the rejections of claims 1-4, 6 and 8-17 under 35 U.S.C. §103(a) as allegedly being unpatentable over Fujimori et al. (U.S. Patent 6,683,244 B2) should be reversed. Claims 2-4, 6 and 8-17 depend from claim 1 and present a common question of patentability.

REMARKS

This Reply Brief is submitted to address several of the Examiner's comments presented in the Examiner's Answer, where Applicants believe further discussion would be of use to the Board. Where Applicants have not provided further discussion, Applicants believe the arguments in the Appeal Brief to be sufficient. Applicants continue to maintain all of the arguments presented in the Appeal Brief.

1. The Prior Appeal was not Decided based on Fujimori's Broad Range Disclosure.

Page 16 of the Examiner's Answer states that the same claimed range was argued in the previous appeal of this application, "which the subject matter thereof was affirmed by the Board." The meaning of the Examiner's statement is unclear to the Applicants. The Examiner appears to suggest the Board previously decided that Fujimori's broad thickness range of 0.0l μm to 10 μm was sufficiently specific to anticipate Applicants claimed range of 10nm to 100nm. Applicants respectfully disagree.

At issue in the prior appeal was whether Fujimori discloses a photovoltaic element having a metallic oxide layer or derivative layer being from 10nm to 100nm thick. The Examiner relied upon Fujimori's broadly described thickness range of from 0.0l μm to 10 μm as purportedly anticipating Applicants' claimed thickness range of 10nm to 100nm. Applicants argued that Fujimori's thickness range was not sufficiently specific to be anticipatory (citing Atofina v. Great Lakes Chem. Corp., 441 F.3d 991, 999 (Fed. Cir. 2006)).

The Board's prior decision of August 28, 2008 does not state whether Fujimori's range disclosure of 0.0l μm to 10 μm was held to be sufficiently specific to anticipate the claimed range. Instead, page 7 of the Board's decision indicates that the Board relied upon a manufacturing step described by Fujimori (Example 1). The Board's decision states that Fujimori's barrier layer in Example 1 is formed by building up laminates in ten coating steps to achieve a total thickness of 900 nm (page 7). According to the Board's rationale, the first laminate layer can have a thickness of 90 nm, which is between 10 nm and 100 nm (p. 7). Thus, the Board's decision did not rest on Fujimori's broad range disclosure, but rather on the initial laminate forming step described in Fujimori's Example 1.

After the Board's decision, Applicants re-opened prosecution and added an additional claim element to distinguish over Fujimori's initial laminate coating step. Applicants' reply of October 27, 2008 included an amendment to claim 1 to recite the additional element: "a metallic oxide semiconductor layer contacting the metallic oxide layer or derivative layer thereof, the metallic oxide semiconductor layer comprising a light sensitizer." Fujimori does not teach or suggest a metallic oxide semiconductor layer contacting a metallic oxide layer or derivative layer that is from 10nm to 100nm thick. When Fujimori's initial laminate coating step is performed, no metallic oxide semiconductor layer comprising a light sensitizer is in contact with the laminate. A metallic oxide semiconductor layer comprising a light sensitizer (e.g., a light sensitizing dye) is not deposited until after the barrier layer 8 has reached its total thickness of 900 nm. For at least this reason, claim 1 as amended distinguishes over Example 1 of Fujimori.

In the present rejections, the Examiner does not rely upon Example 1 of Fujimori. No single step in that or any other example meets the added claim element. Rather, the Examiner again relies upon Fujimori's broad thickness range of 0.0l μm to 10 μm in support of the rejection of claim 1. These rejections should be reversed because Fujimori's broad thickness range is too vague to anticipate or render obvious the claimed subject matter (see Applicants' Appeal Brief filed July 23, 2009). In the prior appeal, the Board did not decide the issue of whether Fujimori's broad thickness range of 0.0l μm to 10 μm is adequate to support the rejection of Applicants' much narrower claimed range. However, the Board implicitly agreed with Applicants because it instead relied upon one step in one example to reject the prior claim. The newly amended claim now at issue distinguishes over that. Thus, the issue at hand is the one we previously argued. Applicants request that the Board reverse the rejections as being contrary to Federal Circuit precedent regarding the anticipation and obviousness of ranges.

2. Fujimori does not disclose Ninety Thickness Values between 10 nm and 100 nm.

The Examiner's Answer alleges that Fujimori discloses ninety thickness values between 10 nm and 100 nm (p. 17). No such disclosure is present in Fujimori. In support of the Examiner's statement, the Examiner cites Col. 12, lines 22-26 of Fujimori. The cited passage states:

> More specifically, it is preferable that the average thickness (film thickness) of the barrier layer 8 is about 0.01 to 10 μm, more preferably about 0.1 to 5 μm, and even more preferably about 0.5 to 2 μm. With this choice, it is possible to furthermore enhance the effect described in the above. (Col. 12, lines 22-26)

The cited passage contains no more than Fujimori's broad range disclosures. The Examiner's statement regarding Fujimori's purported disclosure of ninety different thickness values finds no support whatsoever in Fujimori. Contrary to the Examiner's assertion, Fujimori does not disclose a single embodiment within the claimed range meeting the limitations of Applicants' claim 1. The Board's prior decision in this case – namely, that a single step in an example in the prior art can anticipate a claim – is consistent with our argument that the claim as amended and now presented distinguishes patentably over the prior art. The Board simply did not find that a broad range disclosure in the prior art anticipates a narrow range claimed, as here. In fact, Federal Circuit precedent exists to the contrary.

The Examiner's incorrect statement regarding Fujimori's disclosure highlights the Examiner's misapplication of the law governing the anticipation of ranges. As decided in Atofina, the disclosure of a range is not the disclosure of every point within the range. The disclosure is only that of a range, not a specific point in that range, and the disclosure of a range is no more a disclosure of the end points of the range than it is of each of the intermediate points. Id.

In this respect, the Examiner's rationale is factually unsupported and improper as a matter of law.

CONCLUSION

In sum, the rejections under 35 §U.S.C. 103 are improper and should be reversed.

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Respectfully submitted,

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